

AIR QUALITY PERMIT

Issued to:	Ruby Valley Garnet, LLC	Permit: #2888-02
	Alder Garnet Operation	Administrative Amendment (AA) Request
	P.O. Box 1370	Received: 9/13/04
	Alder, MT 59710	Department Decision on AA: 02/23/05
		Permit Final: 03/11/05
		AFS #: 057-0011

An air quality permit is hereby granted pursuant to the Ruby Valley Garnet, LLC (Ruby Valley) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Ruby Valley operates a garnet sand production facility, including excavation (placer mining) of garnet-bearing sand and gravel, separation, screening, and concentration of the garnet sand and product drying. The location is one-half mile east of Alder in Section 10, Township 6 South, Range 4 West, Madison County. The project is referred to as the Alder Garnet Operation.

B. Current Permit Action

The Department of Environmental Quality (Department) received a request, dated September 8, 2004, from Montana Oregon Investment Group, LLC and Ruby Valley to transfer ownership of Permit #2888-01 to Ruby Valley. The current permit action transfers ownership of Permit #2888-01 to Ruby Valley and update the rule references and permit language.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Process fugitive emissions shall be limited to 10% opacity (ARM 17.8.749).
2. Stack emissions shall be limited to 7% opacity from the product handling baghouse and 10% from the dryer baghouse. If the same baghouse is used for both operations, emissions shall be limited to 7% (ARM 17.8.749).
3. Particulate emissions shall be limited to 0.05 grams per dry standard cubic meter (g/dscm) from the product handling baghouse and 0.092 g/dscm from the dryer baghouse. If the same baghouse is used for both, the more stringent limitation applies. An initial demonstration of compliance (stack testing) will not be required, but the Department may require testing at a later time based on visual observation (ARM 17.8.105 and 17.8.749).

4. Maximum annual garnet sand production shall be limited to 40,000 tons per year. The maximum amount of raw material handled shall be limited to 1,000,000 tons per year (ARM 17.8.749).
5. Ruby Valley shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.749).
6. Ruby Valley shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.749).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Ruby Valley shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations. Ruby Valley shall submit the annual garnet sand production and raw material handled annually to the Department by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

2. Ruby Valley shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745 that would include a change in the control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emissions unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonable practicable in the event of an anticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by Ruby Valley as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

SECTION III: General Conditions

- A. Inspection – Ruby Valley shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Ruby Valley fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Ruby Valley of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(ii)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Ruby Valley may be grounds for revocation of this permit, as required by that Section and rules adopted thereunder by the Board.
- H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Ruby Valley Garnet, LLC
Alder Garnet Operation
Permit #2888-02

I. Introduction/Process Description

A. Permitted Equipment/Process Description

The project processes up to one million tons per year of garnet bearing sands and gravels from previous placer gold mining tailings. Garnet sand production could be up to 40,000 tons per year. The product is used as an industrial abrasive.

Raw material is mined with a dragline feeding a nearby skid-mounted trommel, screen, and jig. Garnet bearing sands then go to a stationary concentration plant followed by drying (propane-fired) and bagging.

B. Permit History

Cominco American submitted an air quality permit application on June 7, 1995, for a placer garnet mining operation to be located near Alder. The application was deemed complete as of June 21, 1995, upon receipt of public notice. Permit **#2888-00** was issued to Cominco American on August 4, 1995.

The Department of Environmental Quality (Department) received a request, dated January 29, 2000, from Cominco American, Inc. and Montana Oregon Investment Group, LLC (Montana Oregon) to transfer ownership of Permit #2888-00. Ownership of Permit #2888-00 was transferred to Montana Oregon and permit rule references and language were updated. Permit **#2888-01** replaced Permit #2888-00.

C. Current Permit Action

The Department received a request, dated September 8, 2004, from Montana Oregon and Ruby Valley Garnet, LLC (Ruby Valley) to transfer ownership of Permit #2888-01 to Ruby Valley. The current permit action transfers ownership of Permit #2888-01 to Ruby Valley and updates the rule references and the permit language. Permit **#2888-02** replaces Permit #2888-01.

D. Additional Information

Additional information, such as applicable rules and regulations, Best Achievable Control Technology/Reasonably Achievable Control Technology (BACT/RACT) determinations, air quality impacts, and environmental assessments, are included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available upon request from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 -- General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This section includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary, using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, MCA.

Ruby Valley shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Testing Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by phone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than four (4) hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 -- Ambient Air Quality including, but not limited to:

1. ARM 17.8.204, Ambient Air Monitoring.
2. ARM 17.8.210, Ambient Air Quality Standards for Sulfur Dioxide,
3. ARM 17.8.211, Ambient Air Quality Standards for Nitrogen Dioxide,
4. ARM 17.8.212, Ambient Air Quality Standards for Carbon Monoxide,
5. ARM 17.8.213, Ambient Air Quality Standard for Ozone,
6. ARM 17.8.214, Ambient Air Quality Standard for Hydrogen Sulfide,
7. ARM 17.8.220, Ambient Air Quality Standard for Settled Particulate Matter,
8. ARM 17.8.221, Ambient Air Quality Standard for Visibility,
9. ARM 17.8.222, Ambient Air Quality Standard for Lead, and
10. ARM 17.8.223, Ambient Air Quality Standard for PM₁₀.

Ruby Valley must maintain compliance with the applicable ambient air quality standards.

- C. ARM 17.8, Subchapter 3 -- Emission Standards, including, but not limited to:
1. ARM 17.8.304, Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
 2. ARM 17.8.308, Particulate Matter, Airborne. (1) This section requires an opacity limitation of 20% for all fugitive emissions sources and that reasonable precautions be taken to control emissions of airborne particulate matter.
 3. ARM 17.8.309, Particulate Matter, Fuel Burning Equipment. This section requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.
 4. ARM 17.8.310, Particulate Matter, Industrial Process. This section requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
 5. ARM 17.8.322, Sulfur Oxide Emissions - Sulfur in Fuel. This section requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
 6. ARM 17.8.340, Standard of Performance for New Stationary Sources. This section incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not a NSPS affected source because it doesn't meet the definition of any NSPS Subpart defined in 40 CFR 60.
 7. ARM 17.8.341, Standard of Performance of Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.
- D. ARM 17.8.501, Subchapter 5 -- Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:
1. ARM 17.8.504, Air Quality Permit Application Fees. This section requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Ruby Valley was not required to submit a permit application fee for the current permit action because it is an administrative action.
 2. ARM 17.8.505, Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, as described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

- E. ARM 17.8, Subchapter 7 -- Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Ruby Valley has a PTE greater than 25 tons per year of particulate matter and particulate matter with an aerodynamic diameter of 10 micrograms or less (PM₁₀); therefore, an air quality permit is required.
 3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
 4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
 5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. Ruby Valley submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action is an administrative action; therefore no public notice was required.
 6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
 7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Ruby Valley of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 -- Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications-- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a PSD source since this facility is not a listed source and the site's potential to emit is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2888-02 for Ruby Valley, the following conclusions were made.
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is not subject to any current NSPS.
 - e. This facility is not subject to any current NESHAP standards.
 - f. This source is not a Title IV affected source, nor a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that Ruby Valley is a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. Ruby Valley shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis is not required for the current permit action because the current permit action is administrative.

IV. Emission Inventory and Control Technology Review

Activity	Uncontrolled Emission Factor	Control Measures	Percent	PM ₁₀ Controlled Emissions Ton/Year
Disturbed Areas	6.4 g/m ²	None	0	0.4
Unpaved Haul Roads	1.1 lb/vmt	Watering	50	7.1
Unpaved Access Road	3 lb/vmt	None	0	3.0
Conveying	0.01 lb/ton	Minimize Fall Distance	0	2.5
Diesel Exhaust	17.7 lb/1000 gal	None	0	1.3
Rotary Kiln Dryer	0.5 lb/ton	Baghouse	99	0.1
Dry Screening	0.12 lb/ton	Baghouse	99	Neg
Total				14.4

Estimated Gaseous Emissions

	Tons/Year
Nitrogen Oxides	22
Sulfur Dioxide	2
Volatile Organic Compounds	2
Carbon Monoxide	9

The values shown are estimated total emissions from diesel exhaust (based on estimated usage of 150,000 gallons per year) and the rotary dryer (based on propane usage of 120,000 gallons per year).

V. Ambient Air Impact Analysis

No air quality monitoring has been done in the area. Air pollutant levels are assumed to be similar to background levels for western Montana.

V. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VI. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Permit Analysis Prepared by: Trista Glazier

Date: December 1, 2004